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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,290	03/29/2001	Ted N. Magee	271/281	6803
7590	05/11/2004			
BEYER WEAVER & THOMAS, LLP P. O. BOX 778 BERKELEY, CA 94704-0778			EXAMINER LORENZO, JERRY A	
			ART UNIT 1734	PAPER NUMBER

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicant(s)

09/823,290

Applicant(s)

MAGEE ET AL.

Examiner

Jerry A. Lorengo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 42-64 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 and 53-64 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 42-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

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## **DETAILED ACTION**

(1)

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9 and 53-64, drawn to an apparatus for forming a dye sublimation image in a substrate, classified in class 156, subclass 540.
- II. Claims 43-52, drawn to a method for forming a dye sublimation image in a substrate, classified in class 156, subclass 230.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process and apparatus, respectively, for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as the heat and pressure lamination of substrates (in either sheet or web form) to produce a laminated composite.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Michael Lee on April 6, 2004 a provisional election was made with traverse to prosecute the invention of Group II, claims 43-52. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-9 and 53-64 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

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(2)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 43-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,059,471 to Haigh in view of U.S. Patent No. 4,997,507 to Meyer.

Regarding applicant claim 43, Haigh discloses a method for forming a dye sublimation image in a substrate comprising the steps of (Figure 13; column 11, line 60 to column 12, line 15):

(1) Providing a sublimation dye carrier 104 having an image thereon formed in a sublimatic dyestuff;

(2) Providing a flat substrate 108;

- (3) Placing the image disposed on the dye carrier 104 against the flat substrate 108;
- (4) Conveying the substrate 108 and dye carrier 104 along a path with a first part 118 and a second part 120;
- (5) Providing pressure and heat against the substrate 108 and the dye carrier 104 in the first part 118 and heating the dye carrier to a temperature sufficient to cause the sublimation image carried on the dye carrier 104 to sublime and transfer into the surface of the substrate 108; and
- (6) Conveying the substrate 108 and dye carrier 104 from the first part 118 to a second part 120 where, under pressure, the dye carrier and substrate are cooled; and
- (7) Separating the spent dye carrier 104 from the sublimated imaged substrate 108.

Although Haigh disclose that the heating 118 and cooling 120 zones are kept under pressure, he does not specifically disclose, as per applicant claim 43, that the pressure is continuous in both the heating and cooling zones and there between. Nonetheless, it would have been obvious to one of ordinary skill in the art at the time of invention to provide for a continuous pressure in the claimed manner motivated by the fact that Meyer, also drawn to methods for the pressure lamination of substrates conveyed through heating and cooling stations, discloses that the provision of continuous pressure on the laminae during heating and cooling (through the use of a continuous double-belt press having an upper and lower belts which are pressed against one another by the action of an evacuating means) enables any air or vapor pockets between the layers to be removed which results in more uniform contact and uniform conduction of heat throughout the workpieces (Figures 1-4; column 7, line 58 to column 8, line 11; column 8, lines 50-68). Furthermore, the skilled artisan would have been appreciative of the fact that without continuous pressure, intimate contact between the dye carrier 104 and the substrate 108 of Haigh could not be maintained thereby resulting in an ineffective sublimation and migration of the dye stuff from the dye carrier to the substrate which would cause mars, faint spots and generally unappealing decoration of the substrate.

Regarding applicant claim 44, although it would have been obvious to one of ordinary skill in the art at the time of the invention that the method resulting from the combination of the Haigh and Meyer references would provide a continuous claming pressure provided over the entire surface of the dye carrier (given that the continuous belts 18,20 and 58,60 are wider that

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the substrate 12 being processed as shown in Figures 3 and 4 of Meyer), neither Haigh nor Meyer specifically disclose that the continuous pressure, as per applicant claim 44, has the effects set forth in applicant claim 46. Nonetheless, the skilled artisan would have appreciated that a continuous application of pressure in the heating and cooling zones and there between would avoid structural creep of the substrate given that Haigh teaches that the substrate and dye carrier must be cooled below their softening temperatures which would ensure that the substrate were structurally stable before they are separated. Furthermore, the skilled artisan would have appreciated that any structural variances imparted to the substrate during transfer would result in a substrate having an inconsistent image and differential penetration of the sublimated dyes therein.

Regarding applicant claims 45 and 50, Haigh discloses that the dye carrier 104 and substrate 108 are pressed together at a pressure of between 0.1 to 50 psig, i.e., 14.01 and 64 psi or 1.01 and 4.57 atmospheres (column 12, lines 58-64). Furthermore, Meyer discloses that the degree of pressurization depends in part upon the type of sheet materials being worked upon with optimum conditions being adjustable in a manner known to those skilled in the art (column 8, lines 41-49).

Regarding applicant claims 47 and 51, Meyer discloses that the continuous pressure is provided by a gas pressure differential, i.e., a vacuum, through the use of turbine means which evacuate the spaces between the upper and lower continuous belts, which act as membranes, thus applying a pressure differential across the belts (column 7, lines 10-15; column 7, line 62 to column 8, line 3, column 8, lines 24-68).

Regarding applicant claim 48, Haigh discloses that the cooling is accomplished until the substrate is cooled below its softening (glass transition) temperature whereupon it would be come rigid (column 12, lines 9-12).

Regarding applicant claim 49, Haigh discloses that the temperature during heating is between 230 and 450°F, depending upon the materials employed (column 5, lines 14-16).

Regarding applicant claim 52, Haigh discloses that the duration of application of sufficient heat and pressure for thermal sublimation transfer is dependent upon the materials being processed and may range between 0.12 and 10 seconds or more (column 12, lines 65-68).

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(3)

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes references C, D, E and F cited on Form PTO-892.

(4)

***Information Disclosure Statement***

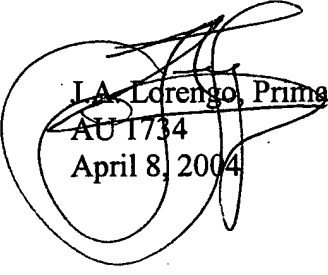
The information disclosure statements (IDS) submitted on 12/18/2001; 09/25/2002; and 10/08/2003 have been considered by the examiner and initialized copies are attached hereto.

(5)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry A. Lorengo whose telephone number is (571) 272-1233. The examiner can normally be reached on Monday through Friday, 8:30 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J.A. Lorengo, Primary Examiner  
AU 1734  
April 8, 2004